

Agricultural.

Seasonable Cat Notes.

One of the most important things to remember now (particularly with kittens) is that they should be allowed as much fresh air as possible. This tends to invigorate them, to make them become larger, permitting health and growth of a thicker bed of hair. If kittens are housed, allowed to be quartered in warm places, they don't have the necessary rigidity to warrant their hair growing or becoming as long and thick as the ordinary specimens.

Much success is achieved by this simple fact well in hand, as one breeder who has thorough knowledge of these fresh-air problems produces an animal with all points that are required in an Angora of high degree, the same time bringing out extraordinary growth of hair, by which the cat secures extra value.

The eye of the Angora is one of its most attractive features, and in mating specimens, should the mother be off in the eye, the father should possess this point more strongly, so as to produce the increase in offspring. In choosing Angoras the eyes have much to do with the expression of the face. The mouth and nose don't possess those points which are much thought of in selecting a specimen. It is said that cats smile and dogs laugh, but these statements are far-fetched, and if one's imagination be sufficiently stretched, a slight quiver of the lip might indicate a smile.

Much depends upon the general expression of the face, if the markings are even. If one eye should be covered with black and the other white, the cat has the right appearance and is a pleasing one. The face, if evenly marked, gives the cat a much better general effect, whereas the body can be marked very irregularly and not affect the value. It is, of course, desirable, if cats be of mixed colors and more dark than light, to have the light well placed, i. e., white stockings, breast and face.

The so-called ermine kittens often come pretty marked, although as a rule the markings are so irregular that the breed of these particular cats has not been sufficiently established to warrant them a class of their own. Some breeders have lately produced a pretty cat called chinchilla, or smoke. Now a cat of this color is hard to breed, and one is likely to get no two cats alike. The true smoke color is very attractive for a cat, and the proper shade affords a very pleasing combination and a color not at all common.

The smoke-colored cats, so called by old breeders, used to be a black cat with white hair nearest the body, but now the cat must be more of a chinchilla to come under that class.

Faults change with the breeding of Angoras as to type the same as with other animals, and this season there is a great call for the "toy" type, so called. A specimen must have short legs, body thus being closer to the ground. Too many breeders have been raising Angoras for size, quantity, so to speak, rather than quality. Those that are not familiar thought a large cat was a thoroughbred and a small one, of the toy sort, a dwarf.

The hair is most important, and breeders should give the same much attention at this time, when the Angora is about to shed. Much depends another season as to the new growth, the care it has at this time. Nurse the hair, give the specimen proper food to feed it. Help it to wash itself and take care of its beautiful covering. Long, straight hair is far better than curly hair. The long hair is more healthy, lasts longer, keeps in better condition. In judging cats the one with long fur scores more. Curly hair is very unsatisfactory. It is not so soft and clean or grows so long. A cat is never so clean or as well groomed that has it. It breaks, makes short hairs in spots where long is required. There are cases where if a cat is properly groomed, curly hair, moderately so, is very effective; if the average specimens would "run off," the cat would three-quarters of the time have a very untidy appearance.

Long hair is important, not curly, more than for one reason. A specimen after being dry in time the fur becomes disarranged. Now if it curls under the stomach it is one mass of knots or bunches, gathering as it does all the dust or dirt. In time these bunches of hair cannot be brushed out and the only way to do is to cut them. The cat then is left in an untidy condition, with here and there spots where the fur shows itself gone. Breeders want long, haired cats rather than one off in fur. It is never proper to cut the nails of a cat. Sometimes when a cat is allowed to come into the house the nails are prominent and the cause of much mischief. Many who have these cats as pets, in order to prevent the destruction of carpets, woodwork or furniture, cut the nails slightly, which prevents them from doing further mischief until they grow out again. But this affects the general system, and the health is found afterwards to suffer. Let the cat go out, it misses the assistance of the nails. Never cut "breeders'" nails.

The nails in measure are as sensitive as the whiskers, which should never be cut. Experiments have been made in cutting the hair on the thickly coated cats in summer. It has been found that these specimens do not specially benefit from it, and it is a fact the coat never returns as vigorous or as even. The hair or ruff should never be cut.

Cats can be washed like dogs. Unless a cat is brought up from a kitten it requires a little skill to get them accustomed as not to be frightened. Cats do not take to water naturally, as a dog. Sponge baths are more frequently employed. The face, nose and eyes can be washed each morning and the cat is better for it.

The feeding of cats now is probably more important than any other season of the year, breeders especially. The diet should be regulated according to the needs and requirements of the specimens. Some cats are more ravenous than others, and are fed on coarser food. It is hard to set a rigid diet, but each fancier should acquaint himself as to the proper feeding of his specimens. Individual feeding is practiced more now, and is more desirable, than if a large number were fed in one lot. The stronger one thrives, while the weaker does not get proper nourishment. Many a valuable specimen is lost in this way and others stunted. A large flock can be badly injured by small things of this nature, if they are allowed to go unnoticed. Best diets are those made of cereals with milk, well seasoned. Milk should be warm, not cold, when given. Cooked meat, cut fine, in small quantities and fish is safely used only when careful study is made. Better bring up young stock minus meat. It is well to give a variety: after you feed a dish, never allow food to stand, or a cat to have easy access. Set the hours of your meals, the cat will be on hand. More than ninety-five per cent. of diseases can be cured by improper feeding.

ROBERT KENT JAMES.

Boston, Mass.

LARGEST PEPPERMINT FARM.

Campania Farm, as it is called, is located in Allegan County, in one of the southern tiers of the Michigan fruit belt. The only means of reaching it is by buckboard over a dozen miles of loose roads. The wagon wheels leave no ruts, for the sand in their wake settles back into place again. Orchards are passed, and waste land covered with scrub oaks and maple, and two or three miles before the mint fields are reached their presence is hinted at by an unmarked, tangle in the air.

The farm was originally a fresh-water swamp—probably a part of Lake Michigan not very many generations ago. It is easier to picture a desert blooming as a rose than to imagine mire and green sown taking form as candy canes. Yet such is the case. Half a century of experiment and ditch digging have taught the trick.

The small timber is first cut off and a rich black earth is found beneath. The land is then drained by means of ditches, which for length are small canals and which are later used for irrigation purposes in the dry season. In the spring, on the contrary, the earth is so loose and shaky that the horses used in cultivating it wear marsh shoes—broad pieces of board fastened to their hoofs to keep them from sinking.

Campania Farm contains 1000 acres of such highly fertile soil, and two thousand more are now being added to it. It spreads out as flat as a duck pond—a lake of pungent waves of crinkly green leaves blanketed at nightfall with a thick vapor. It is a chemical laboratory exactly two miles wide. There are no fences, but the ditches are laid off with geometrical precision. A roadway intersects it at right angles, and at the exact center are the buildings from which the whole is operated, and at which live more people than in many of the neighboring villages. The smart in the newcomer's eyes, as well as his nose, tells him that he is in the middle of the biggest mint field in the world. There is a peculiar dampness and chill to the atmosphere, especially after dusk.

A model boarding house accommodates one hundred men, and near by is the summer cottage of former Congressman Todd, the owner of the farm. There are ice houses and farm buildings in profusion, warehouses, a library and club rooms for the workers, and what is said to be the biggest barn in the world. This last represents one of the most daring pieces of economy in the industry. The disposal of the hundreds of tons of mint hay after the oil had been extracted was one of the earliest problems to be met.

Another Michigan problem is the utilization of the vast tracts of stump land left by the lumberman in the northern part of the State. Mr. Todd united the two problems in the solution. He purchased 7000 acres of forage land north of Grand Rapids, and with a herd of 500 Shorthorns started the first big cattle venture in the Peninsula State. In the late fall half a thousand animals were shipped south and wintered in the great barn at Campania.

This barn is architecturally unique. It is in the shape of a star, half a dozen buildings in reality radiating around a six-sided rotunda in the center. In the open space three large silos have a capacity of 3000 tons of ensilage, and there is room for 1000 tons of hay in the lofts above. The peppermint plants, which make such excellent fodder when dried, are equally valuable as fertilizer when rotted. Summer and winter industries are thus carried on in the same place, and permanence of employment for the workmen is not the least of the advantageous features resulting. Mr. Todd pays \$20 a month for labor, with board and lodging, and an additional bonus of \$2 a month for those who stay the summer through. This keeps the men at work during the harvest season, when they are most needed, and when the chance for work elsewhere is greatest. This industrial community is one of the interesting phases of the enterprise.

Todd is not only a member of several scientific but of various social and political science organizations. His ideas are carried out here. No intoxicating liquor is allowed on the place. This does not mean that blue laws govern mint culture. On the contrary, a rollicking harvest festival is held at the close of each season. Japanese lanterns are strung about the lawns, the buildings are all thrown open, the barnyards are lined with the rigs of the visiting farmers, a big outlay of good things is provided for all comers and weed pullers and pretty school teachers for miles around, the proprietor himself joining in a measure with them.

Mint propagates from roots similar to hops. The plant spreads by runners. It does this very rapidly, and if it has free reign, the entire ground is soon covered. Weedy soil is thus the bane of the crops, and when the season has advanced so that cultivation is no longer practicable, the weeds are pulled by hand. With soil on which weeds run riot, such as is best for mint, the amount of hand labor required is large. Harvest time comes and the mint is combed in one direction and carded by means of a powerful two-horse rake. There are snags and crinkles like the kinks in tousled hair, and if the ground has feelings it must wince at the process. The mowers are then run in the opposite direction and in this way all the plant is cut off.

The best yield in quality of growth is not to the acre comes from the first year's planting, as the oil comes from the leaves and tender ends of stems. But the second and third year crops are held ordinarily the most profitable, as they do not require re-

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GROUP OF HAMPSHIRE DOWN EWE LAMBS.

planting nor as much cultivating and weeding. The ground is plowed to a depth of six inches each fall and the crop follows without resetting, the pains toward keeping up the richness of the soil all increasing.

To take the product of Campania Farm are three large stills said to be the most powerful of the kind in the world. The ordinary still turns out one hundred pounds of oil a day. These handle over 100. The mint is pitched into large steam-tight vats with closely fitting covers. A jet of steam is turned on and the oil cells swell and burst. The oil is vaporized and carried out with the steam to a worm over which cold water is running. Steam and oil vapor are both condensed, but in the tanks into which the liquid runs the oil rises and is easily drawn off into storage cans containing from twenty to thirty-seven pounds. In the main warehouse is a tank holding seven thousand pounds, provided as a safeguard against fire.

From the farms the oil is shipped to the big Todd laboratories in Kalamazoo, in which the largest part of the mint oil produced in the State is refined. A secret process, which has made possible the organization of the industry on so large a scale (100,000 pounds of the refined oil, worth \$150,000, was shipped last year over the world—half of it to England and Europe). The Michigan oil received the gold medal at both the Paris and Buffalo Expositions.—New York Sun.

Butter Market.

There is a firmer feeling in the butter market this week, though there are but few changes in the prices, and best creamery now sells lower here than in New York and Western markets. The changes result more in an increased demand and a little better rate for good firsts and dairy marks than in higher rates for extra creamery, for which 20 cents is asked, though it is hard to get buyers to pay over 24 cents, and some dealers seem to think it harder to let an old customer go away without selling him what he wants. Best marks of Eastern are held at 20 to 24 cents, and Northern or Western firsts are selling at 27 to 28 cents, seconds at 22 to 25 cents. There is not much June extra to be found, and it is held at 23 to 24 cents, with fair to good at 19 to 22 cents. Boxes and prints are not in as good demand as last week. Extra creamery is held at 29 cents, extra dairy at 26 cents, and fair to good 18 to 23 cents. Dairy in tubs is 25 to 26 cents for Vermont, and 24 to 25 for New York. Firsts 22 to 23 cents, and seconds 18 to 20 cents. But little doing in Western imitation creamery, but some extra goods at 19 to 20 cents, firsts at 16 to 18 cents dull. Very few ladles here, nominally at 15 to 18 cents. A fair call for fresh made renovated at 22 to 23 cents, but fair to good at 18 to 21 cents not in much demand.

The elm-leaved beetle at Boston for the week ending March 10 was 10,783 tubs and 15,563 boxes, a total weight of 522,931 pounds, including 28,500 pounds in transit for export, and with the latter deducted, the net total was 494,431 pounds, against 508,157 pounds the previous week and 818,737 pounds for the corresponding week last year.

The exports of butter from Boston for the week were 51,424 pounds, against 82,816 pounds for the corresponding week last year. From New York the exports were 1461 packages, nearly all renovated butter from the West. Our through exports are mainly from Canada.

The Quincy Market Cold Storage Company reports the stock of butter at 31,503 tubs, against 22,903 tubs last year. The Eastern Company stock is 4061 tubs, against 4106 tubs last year, and with these holdings added, the total stock is 35,564 tubs, against 27,136 tubs the same time a year ago, an increase for this year of only 8405 tubs. During the month of February the stock was reduced 37,381 tubs, against 19,297 tubs for the same time last year.

The summary of trade in February shows on hand Feb. 1, 2,917,800 pounds, and receipts of the month 2,145,489 pounds, a total supply of 5,063,289 pounds. Exported 292,071 pounds, and on hand Feb. 28, 1,422,200 pounds. Consumption in February, 3,348,638 pounds. February, 1901, there was on hand 1,838,200 pounds, and receipts were 2,298,085 pounds, a total supply of 4,136,285 pounds. Exports were 542,649 pounds, and on hand Feb. 28, 1,096,390 pounds. Consumption for the month, 3,326,096, about 200,000 pounds more than this year.

Boston Fish Market.

Fresh fish in better supply, but fair prices are received, as demand is good. Market cod sells at 24 to 26 cents a pound, large cod 24 to 26 cents, steak 24 to 26 cents. Haddock 24 to 26 cents. Hake at 24 for large, small, scarce, at 24 to 26 cents, pollock 5 cents, cusk 25 cents and flounders 4 cents. White fish 8 cents. Striped bass 18 cents, black and sea bass 10 cents. Frozen mackerel 20 cents each for large and 15 cents for small. Native smelts 12 cents a pound for large and 7 cents for small. New Brunswick extra 10 cents and No. 1 5 to 6 cents. Pompano 16 cents, Spanish mackerel 15, sheephead 14, snappers 12 and bluefish 10 cents a pound. Halibut 10 to 18 cents for white, 10 cents for gray and 11 cents for chicken. Lake trout 11 cents and sea trout 6 cents. Frozen herring 34 cents, yellow perch 6 cents and white perch 8 cents a pound, with pickled 15 cents. Western salmon frozen 10 cents, eels 10 cents, fresh tongue 10 cents and cheeks 8 cents. Lobsters very scarce at 22 cents alive and 28 cents boiled, shrimps \$1 a gallon, clams 50 cents a gallon and \$2.50 to \$3 a barrel. Oysters in good demand at \$1.15 a gallon for ordinary Norfolk, \$1.25 for selected and fresh-opened Stanfords and \$1.40 for Providence River.

Now comes a Swedish scientist with the discovery that milk can be made into flour and changed back to milk by the addition of water. Of course a pound of flour would be a pint of milk.

Fight the Insects at Once.

How many of the Massachusetts towns would continue to attract people in search of suburban and country homes or summer visitors if the fine old roadside trees were removed? It is feared that the full value of these trees is not appreciated in the light of town assets. If a town lost many of its fine old trees from some natural cause, such as an insect raid, which is quite possible, it is safe to say that the effect would be noted before long by those who cater to summer visitors. Such a calamity may be avoided, however, if the town tree wardens are provided with reasonable sums of money with which to fight the pests.

There are now well established in Massachusetts a number of tree-feeding insects which are wholly capable of effecting the ruin of our shade trees if left to themselves. Among the most dangerous are the gypsy moth, the brown-tail moth, the elm-leaved beetle and the white-marked tussock moth. The first three are close feeders, and if they appear in considerable numbers on a given tree will completely defoliate it in a short time. Even pines have been defoliated and killed by the gypsy moth. It is claimed by recognized authorities that deciduous trees are very likely to die if subjected to defoliation for two successive seasons. It is certain that no tree can long continue in a healthy state if its leaves, which are to all intents and purposes its breathing organs, are greatly interfered with. Immediately a tree falls sick in any way a host of parasites stand ready to fasten upon it and sap it of its remaining vitality, and a sick tree, like a sick man, stands but a poor chance of recovery when complications set in.

An ounce of prevention should be administered in time, and now is the time to begin giving the dose. Wardens should at once look over the town trees (many have already done so) and ascertain whether they are infested. Gypsy-moth eggs are easily recognizable from the ground. They appear in small, yellowish-brown patches, the size of a quarter to that of a half dollar, on the bark of the stem and on the under sides of branches, or in sheltered places in walls and on fences. To kill these egg masses is to kill several hundred embryo caterpillars with a single dab of a brushful of cresote oil.

The presence of the brown-tail moth is even more easily recognized at this season than the gypsy. They appear now in little bunches of dry leaves and twigs out on the tips of the fine sprays. To cut these off with a pole pruner and burn them at once is to save expense of spraying later. These bunches contain from two hundred to three hundred young caterpillars.

The elm-leaved beetle passes the winter in the beetle form, securely hidden away in some crack in a telegraph pole or fence rail, or perhaps inside a barn or shed. There is no way in which he can be fought now unless found in masses, as is sometimes said to be the case in corners of barns. If the elms were stripped last year by a yellowish-brown beetle about a quarter of an inch long, or by a little black or black and yellow caterpillar about half an inch long, then it may be known that the elm-leaved beetle is on hand. If he was present last summer he will as surely be there next, and doing an increasing business at the old stand. Spraying with arsenical poisons is the most favored means of combating this pest. The cost of such spraying on large trees will run from about twenty to thirty-five cents a tree. This is pretty cheap insurance for so valuable a piece of property as a fine elm tree. This spraying cannot be done now, of course. But when the leaves form in the early summer the beetles will begin to eat, and then the wardens will want to be ready with their spraying apparatus, or with money to their credit in the town vault with which to hire a professional to do the spraying.

Under the authority of the tree-warden law towns may appropriate annually a sum of money, not exceeding fifty cents for each of its ratable polls in the preceding year, for the planting of shade trees. They are also authorized by another section of the same law to annually raise and appropriate "such sum of money as they may deem necessary" to be expended under the direction of the warden in exterminating insect pests.

It therefore appears to be the duty of the warden to estimate how much money will be required for the proper treatment of the property under his control, and to urge his claims upon the town, and then to see that the loss does not rest on his official shoulders.

If a town cannot afford to appropriate money for new trees and for insect extermination also, it would be well to omit the planting of new trees, except where necessary to replace dead ones, and to devote its energies to the proper care of the existing undertakings.

The cost of cleaning up brown-tail and gypsy moths will not be great in any event if the work is done systematically before the spring opens, when hundreds can be

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Not get the English bricklayers to lay over 800 bricks a day; they imported American bricklayers, who laid 2000 a day. The price of the English workmen was at stake; they took off their coats and demonstrated that they were as good bricklayers as the Americans.

The conservation of the English manufacturer keeps him from introducing the new machinery so imperatively needed. A machine which did satisfactory service for a man's father and grandfather is regarded with veneration. This is the conservatism which for years fought the introduction of the typewriter and will not today permit a telephone within the sacred precincts of the Bank of England. Marked as this conservatism, it is quite overshadowed by the hostility of the workmen to these same machines.

These conditions, evolved under the rule of the walking delegates, are the despair of Englishmen, who hope to see their country win back a lost industrial position. We also have the beginning of the same sort of unionism; and we should not be blind to the lesson of England.

In summing up our advantages in the world's trade competition, there stand out clearly one fundamental reason for our supremacy,—the United States has of all nations the most unbending wealth of natural resources. The age of machinery is not the age of power, another way of saying that it is an age of coal. The nation which has the cheapest raw material and the cheapest labor has the permanent advantage in the world's markets.

The War Department at Washington said that the United States is safe, notwithstanding the bellicose talk in the House of Parliament over the Irish boundary question. During a debate over this question at Ottawa, G. H. Gourlay of Pictou, N. S., struck a note of attitude and accused Great Britain of always sacrificing Canada in its negotiations with the United States. Rather than admit defeat, he and his family would move to the trenches and stay there for two years, if need be, to fight for the rights of Canada. It is necessary," he said, "to fight the work we will fight within two or three hours, and after six months we will secure their capital, and annex their territory to Canada." The debate was brought to a close by the motion of the Hon. J. H. Bourassa, who moved for adjournment and correspondence connected with the Clayton-Bulwer treaty and the Alaska boundary. The premier said that the correspondence could not be brought down until negotiations were going on. Bourassa withdrew his motion, otherwise the House at Washington might have been in danger.

The latest phase of trades unionism in England has been actuated by a false economic theory, to which, more than any other cause, can be attributed the present unhappy state of British industry. This is, that there is a given amount of work to be done in Great Britain, and that if the day's output of the individual worker is decreased, the result will be an increase in the aggregate number of days' labor. There is further the uneconomic principle of a minimum wage, to be paid to all men employed, with regard to the relative value of their labor, and with no maximum wage; men who start in to turn out a full day's work are disciplined by their unions, or at least put under a social boycott, being called "sweaters" and "masters' men."

Bricklayers in London do not average over 400 bricks a day, whereas an active man can readily lay 1000 to 1600 a day. The British Westinghouse Company is building a \$5,000,000 plant at Manchester on American lines; and the way in which the building operations have been pushed forward has been the marvel of English builders and workmen. The contractors could

Poultry.

Practical Poultry Points.

There are many who think that ducks can be made profitable as egg producers, in contrast to the many ducks found in the markets in the spring. The ducks, especially the Pekin, are almost continuous layers, as they lay nearly every day after the first of the year. Many of them also begin to lay in the fall. The eggs are larger than the ordinary ones, and said to be richer in yolk. There are some who profess not to like the flavor of the duck's egg, but that others appreciate them is shown by the fact that they sell at a much higher price when they first begin, and seldom sell for less than twenty cents a dozen at wholesale, or thirty-five cents at retail in our Eastern markets. The duck also eats coarser food, and while a voracious feeder will gather most of their food themselves if allowed their liberty. They are also housed more cheaply than the hen, but they need much care to keep their houses clean and well ventilated, and to keep them there in the morning until they have laid their eggs for the day.

A writer in an exchange says of the Brahmas and Plymouth Rocks at the recent Poultry Show in New York, that "a feature of the show was the enormous size of individuals of the layer breeds, showing what can be done by care, breeding and selection. It is seldom that such large Brahmas and Plymouth Rocks are seen in an ordinary poultry yard." We are glad that they are not. We have protested against such overgrown specimens being used as breeding stock, and they have no more title to be awarded premiums than the undersized ones, but should be disqualified as soon as recognized. We have had them in both breeds, and the hens were not good layers, or the males were stock getters. Among the first Brahmas we ever raised was a cockerel that weighed a little more than thirteen pounds alive when, as I remember right, he was not quite six months old. Certainly he was a spring chicken and we did not winter him. He showed too much like the Chittagongs that we knew before the war, that could eat off the top of a flour barrel, and were limited to about six eggs a year for the hens, and three or four chickens out of fifteen eggs. The standard calls for birds heavy enough, and extra weight or extra length of legs and neck does not give more eggs or better birds for the table.

Poultry dealers in some of the Western States are reported as complaining that they cannot get as many young birds for market this year as usual for the season, and an exchange suggests that it is because the people there have a better idea of the profit in keeping fowl for egg production, and would not sell their pullets in the fall, hoping to obtain eggs from them in the winter or next spring. Not being familiar with the country there, we cannot say how much truth there is in this theory, but we hope it is a correct one. Here we are, in the middle of February, with no eggs in cold storage in Boston, although the supply last fall was larger than ever before, and but few eggs coming. Demand has slackened because many are unwilling to pay more than a few weeks ago, and think they can and must use them less freely than they have done until warmer weather causes increased production.

But cold storage has worked a great change in the egg trade. Not many years ago eggs were so plenty in April and May as to the time the hens began to get broody, that the poultry keepers thought they were scarcely worth taking to market. Now the demand for eggs in April and early May to be put in storage is such that they sell at almost as much as at other seasons, even though the hens are doing their best. It would be interesting to look back over a year's record now, or on April 1 and see how much good fresh eggs have varied in price during the year, or rather how little, not taking into account the fancy nearby lots that go to those who do not care what they pay, but such eggs are sold in the markets to the greater number of the buyers.

And those eggs graded as choice or selected fresh, or the eggs from cold storage are sweet and wholesome, and those who use them are not too fastidious to relish them. Indeed, we doubt if some of those who pay the prices of fancy eggs, new laid, would know the difference if they had some that were a month old or had been in cold storage six months.

The poultry keeper or person who has made that a specialty, to the exclusion of nearly everything else, is usually selected to talk at the Farmers' Institutes, to instruct the farmers how to keep and care for their poultry. It may be that they are the best informed, and thus the best fitted to impart useful knowledge, but we have thought as we read what they had to say that they were apt to get a little bewildering to some of the audience. When they talk about thousands of fowls, acres of hen yards, incubator cellars with a half dozen or more 200-egg machines running most of the year, or at least most of the winter months, and steam-heated brooder houses, are they a little over the head of those who are to listen to them. Such advice means the investment of hundreds if not thousands of dollars in capital, an expense which would make advice unnecessary, and not only devoting one's whole life to the business, but the employment of other help.

It is much like the advice we used to hear a few years ago, for the farmer to try to grow better cows by getting a \$5000 Short-horn bull; advice which those whose farms were not valued at over \$1000, with possibly a few cows were assessed at \$15 to \$20, could not well follow. Another bit of advice in those days was that farmers should swamp lands worth about \$5 an acre should expend \$150 per acre to have the land drained. The advice may have been good, but we never learned that the farmers were willing to loan them the money and wait for the future crops to pay them.

Now, we believe that almost every man who has a tract of land from five to 640 acres should keep poultry. He should have a good comfortable building, or more than one for them, and enclosed yards for them. The number may be twenty-five or 250, according to his knowledge of the business, and the help that he may expect from members of his family, especially those too young or too old to share in the more laborious work of the farm. He should care for them or see that they were properly cared for. He should grow from three to seven chickens each year for every old fowl kept, and after selecting the best stock he grows to keep, his stock another year up to their numbers, should market the others. By so doing we think he could realize a fair profit,

of from \$1 to \$3 per head, on his original stock, and that without hindering the other farm work, which he may think more important, to any considerable extent. If the time comes when he thinks best to devote himself entirely to the poultry business, then let the specialist give him instructions.

Poultry and Game.

The poultry supply continues good, with but a light demand, and Western lots are certainly easier, though fresh-killed Northern and Eastern chickens are steady. Choice large roasting chickens bring 18 to 20 cents and broilers 20 to 25 cents. Very few fowl bring over 13 cents and most lots are 11 to 12 cents. Choice pigeons are \$1.25 a dozen, common to good 75 cents to \$1.25. Choice large squabs in demand at \$2.50 to \$3 a dozen, but the class from \$1.50 to \$2.25 sell hard. Western dry-packed stock in barrels in fair demand but must be bargain prices. There are some choice chickens that bring 14 cents, the bulk are 11 to 13 cents. Fowls 11 1/2 cents for selected large, and 10 1/2 to 11 cents for fair to good. Choice large capons are very scarce and held at 16 to 17 cents, with small to medium 13 to 15 cents. Ducks, good to choice, 14 to 16 cents, and geese at 10 to 12 cents. Choice young hen turkeys are scarce at 16 1/2 cents headed and drawn, choice hens and toms sell at 15 to 16 cents, mixed lots 15 1/2 cents, old toms 12 to 13 cents, and poor No. 2 9 to 11 cents. Barrel stock nearly the same this week. Live poultry in light receipt. Fowl in demand at 11 to 11 1/2 cents, chickens at 10 to 11 cents, and old roosters dull at 5 to 6 cents.

Game is dull, but little fresh-killed coming in. Grouse from storage \$2 to \$2.50 a pair and quail \$2 to \$3 a dozen. Some wild geese sold last week at \$1 each and brant \$1 a pair. Small shore ducks, as coots, teal, wildgeese, whistlers, etc., come in at 30 to 40 cents a pair, but they are mostly thin in flesh. Canvasback in storage at 50 cents to \$2.50 a pair and red heads 50 cents to \$1.50. Venison and other wild game in storage, with little call and prices remaining steady.

Horticultural.

Fungous Fruit Diseases.

Prof. M. B. Waite of the United States Department of Agriculture recently lectured before the society in its hall on Huntington avenue on "Fungous Fruit Diseases." His lecture was illustrated by a large number of lantern slides. He spoke, in part, as follows:

"Pear leaf blight, caused by the fungus *Entomospium maculatum*, produces small round spots on the foliage, and causes the leaves to drop early in the season. It also produces ugly hard spots on the fruit, frequently causing it to crack open. It is readily preventable by spraying with Bordeaux mixture, about three treatments being necessary on orchard trees. The first should be made as soon as the foliage is well out, about three weeks after the bloom sheds, and the other two at intervals of ten days to two weeks.

"The quince spot and the leaf blight of the quince is caused by the same fungus, and is preventable by the same treatment. However, the first treatment should be slightly earlier in the case of the quinces. Pear stocks and quince stocks in the nursery suffer severely from defoliation caused by this fungus. The treatment in this case should be more complete, the first spraying being made as soon as the first leaves are expanded, and about six treatments are necessary, at intervals of ten days to two weeks.

"Apple scab is one of the well-known pests of apple orchards, especially in the North. It is caused by the fungus *Fusicladium*. A like species produces the pear scab, a similar disease of the pear. These diseases are also readily preventable by spraying with Bordeaux mixture. The treatment, however, should begin early in the season, as soon as the buds have burst from the cluster and exposed the individual flower buds. About three or five treatments are necessary.

"The bitter rot of the apple is a very serious pest in Maryland, Virginia to Missouri, and southward. While scab is particularly bad toward the North, bitter rot takes its place toward the South. The treatment for bitter rot should be about the same as for apple scab, but the results of spraying have not always been satisfactory. In the mountains of Virginia, both bitter rot and apple scab occur. The latter attacks the leaves, while the former attacks the York Imperial and Newtown Pippin.

"Canker is the term applied to several diseases which attack the bark of apples, pears and other fruit trees. This type of disease can usually be prevented by spraying with Bordeaux mixture. Where it has already appeared on the trees, it should be cut out as much as possible, the wounds, where large, coated with paint or liquid grafting wax, and then the trees thoroughly sprayed in early spring until they are blue with rather thick Bordeaux mixture.

"The black rot of the grape still maintains its position as the most serious pest of this fruit over a large portion of the country. The destruction wrought by it in the Niagara vineyards of North Carolina this last season was almost complete, and the Delaware were seriously injured in spite of more or less spraying. No diseases, however, have been more thoroughly demonstrated as susceptible to treatment than the black rot and mildew of the grape, although we regret to say that the annual losses from these diseases still continue to be large.

The first treatment should be made with Bordeaux mixture just as the buds are swelling. The second treatment may be made when the grapes are in bud, a third just after the fruit has set, and the fourth and fifth at intervals of ten days to two weeks. If spraying is deemed necessary after the fruit is from two-thirds to three-fourths grown, an ammoniacal solution of copper carbonate should be used instead of the Bordeaux to avoid discoloration of the ripe fruit.

"Pear blight is one of the most destructive pests of pomaceous fruits. It is caused by the microbe *bacillus amylovorus*, one of the bacteria. This germ works in the blossoms, young fruits and fleshy bark, killing these tender succulent tissues and resulting frequently in the death of the entire tree. The disease enters the tree normally through the nectary of the bloom, and is carried from flower to flower and from tree to tree by bees and other insects, which are visiting the flowers for their honey. It also enters the tree through the tender tips of young shoots, but even here insect punctures and insect distribution are probably necessary. The tree resists the inroads of the blight quite strongly, and in a majority of cases successfully, the resistance depending on a number of different factors. In the majority of cases of infection of pear blight, the blight dies out during the summer time completely. In a few cases, however, the disease gets



A THOROUGHbred SCOTCH COLLIE.
Buff and White Type.

into the fleshy bark of the limbs or body and remains alive over winter. These cases, which I call hold-over blight, start the infection on the blossoms the next spring. The remedy for pear blight consists especially in cutting out the hold-over blight in the fall of the year. The work should be done very thoroughly and carefully, cutting from six inches to a foot below the lowest discoloration. The trees should then be examined very carefully the next spring, just before the blossoms open, to be sure that no cases have escaped. Cutting out during spring or summer when the foliage is on is beneficial always, but may not necessarily be effective in eradicating the pest. About two to three weeks after the blossoms have shed, it is an important time to inspect the pear orchard for blossom blight, and the prompt removal of a few cases at this time may be very beneficial.

"Peach yellows is one of the most serious of the diseases of the peach, and has utterly eluded all efforts by scientific men to find out its cause. There are many things, however, known about the yellows which are important to the orchardist. The disease is a communicable one, spreading rapidly from tree to tree and from orchard to orchard. The method of communication is not known to scientific men, but it may be artificially communicated by budding from diseased trees. As no such process takes place in the orchard, there must be some other way by which the disease is transmitted. The disease behaves like a contagious parasitic disease, but no germ or microbe has ever been found. Strange to say, the disease can be prevented as thoroughly and satisfactorily as any known plant disease, although the common opinion of horticulturists is to the contrary. By promptly removing diseased trees at the very first symptoms of the disease, it is possible to keep it entirely in control in an orchard or in a region.

"The rosette is a very similar disease to the yellows, but is restricted to the South, so far as is known, it being limited mainly to the State of Georgia. This disease is very much quicker in its action than the yellows. The first symptoms appear on the tree in the spring, and frequently they are dead by August and never survive the year.

"The little peach disease is a comparatively local disease in Michigan and New York State, but is very severe in a few localities. The main symptoms of little peach are the reduced size of the fruit, the belating of the fruit, the yellow color of the foliage without apparent cause, and the diminution of twig growth, and finally the gradual death of the tree, limb by limb. Careful investigation of this disease has shown it to be distinct from the yellows and rosette, and to be due to a root parasite, a minute fungus growing on the feeding roots.

"The Monilia fungus, causing rot of peaches, plums and other fruits, is one of the worst pests of the stone fruits. This fungus is greatly favored by wet weather and does an enormous amount of damage in the Atlantic coast States from New England to Florida. The past season it was particularly destructive from Maryland southward to Georgia. By far the larger part of the early peach crop of Georgia was destroyed by it, and in some orchards in Virginia the entire crop was taken, both early and late. It is a disease that is greatly favored by wet seasons and largely disappears when long periods of drought occur at the ripening time. Persistent efforts have been made by a large number of investigators for the past five or six years to treat this disease by spraying. Various fungicides have been employed, and different times and numbers of treatments have been used. The results, we regret to say, have not been satisfactory. There seems to be but little trouble in preventing the Monilia, at least greatly reducing it in an average season, although in a very wet season this part of the programme cannot always be fully carried out. The main difficulty comes from the injury to the peach trees by spraying. Bordeaux mixture sprayed on apples, pears, quinces and also on potatoes and many other plants, has a distinctly beneficial effect on the plant aside from its fungicidal value. It increases the amount of chlorophyll, making the leaves darker green, and enables them to stand more drought and heat. They persist longer on the plant and do more work. In case of the potato, at least, they assimilate more starch. There are probably minute amounts of copper salts absorbed into the leaves, producing this beneficial or tonic effect. On the other hand, the peach and the Japanese plum, as well as some other plants, are injured by the copper spray.

"The peach leaf curl is one of the few fungous diseases of the peach that is easily preventable by spraying, for the reason that the spraying in this case is done just as the buds are swelling. Ordinary standard Bordeaux mixture should be used for the purpose.

"There is a great deal of very bad Bordeaux used in spraying, and it is possible to mix the bluestone and lime in such a manner as to make vast differences in the mixture. The correct Bordeaux mixture should be sky-blue in color, of a very fine grain, and should settle very slowly. The copper must be completely neutralized by the lime. To make good Bordeaux, it is usually best to prepare stock solutions of both the lime and the copper sulphate,

containing one pound to a gallon of water in each case. To make, for instance, fifty gallons of Bordeaux dilute the lime with twenty-five gallons of water and the bluestone with an equal amount, and pour these quickly into a third vessel, stirring rapidly. The quality of the lime is very important. A good grade of stone lime should be used which will slake up evenly into a fine paste, which will dilute into a smooth, creamy mixture. For the purpose of more readily mixing the lime and bluestone solutions, I have devised several arrangements by which the two can be diluted in barrels or tubs, and then run by gravity through a rubber hose into the receptacle. Standard Bordeaux mixture should contain six pounds of bluestone, four pounds of lime to fifty gallons of water, and is known as the 6-4-50 formula. Strong Bordeaux may be made with half the amount of water for spraying peach foliage, dilute Bordeaux containing three pounds of bluestone, nine pounds of lime and fifty gallons of water is to be preferred. This will be known as the 3-9-50 formula."

The Hay Trade.

There has been smaller shipments of hay to distributing points during the week, but cars that have been sidetracked came in, and in many places the streets were not in condition for heavy trucking, there has been but little improvement in amount of local trade, but export demand has been good at Eastern markets, and there has been no accumulation of stocks, and a rise in prices of choice at some points.

Boston received 531 cars of hay, but 403 were billed for export and 13 cars of straw. Corresponding week last year 272 cars of hay, of which 102 were billed for export, and 20 cars of straw. Best grades are firm, choice timothy at \$17.50 to \$18 for large bales and \$16.50 to \$17 for small, No. 1 \$16 to \$17, No. 2 \$14 to \$15, No. 3 and clover mixed \$12 to \$13. Clover \$12 to \$12.50. Straw quiet at \$15 to \$16 for long rye, \$11 to \$12 for tangled rye, and \$9.50 to \$10.50 for oat.

Few realize the increase in exports of hay from this port. During January there were 107,120 bales exported, against 18,300 last year, and during February there were 123,215 bales, and in February, 1901, 32,020 bales, a gain of 150,215 bales over same two months last year. Last week, three steamships carried 27,720 bales, of which 14,215 bales went on the *Utonia*, 281 carloads or about 401,940 bales have been received from Canada for export, beside perhaps one-third as much more for local use.

New York received from railroads 5730 tons, against 6980 tons for same week last year, and 150 tons of straw; exports were 28,665 bales. The trade has been dull, as is usual near the last, but the light receipts have caused a general advance in prices. Prime timothy is \$19 in large or small bales, No. 1 \$18, No. 2 \$17, No. 3 \$13 to \$14, shipping \$11 to \$13, clover the same and clover mixed \$11.50 to \$12. Rye straw No. 1 \$16, No. 2 \$15 to \$15.50, oat \$10 and wheat \$9 to \$13.50. In Jersey City, prime No. 1 and No. 2 about 50 cents a ton less than in New York, but lower grades the same.

The Hay Trade Journal gives highest prices at \$19 in New York, Jersey City \$18.50, Boston \$18, New Orleans \$17.50, Nashville \$16.50, Baltimore, Philadelphia and Richmond \$15.50, Norfolk, St. Louis and Pittsburgh \$15, Memphis \$14.50, Chicago \$14, Milwaukee and Kansas City \$13.50, Cincinnati \$13.25, Buffalo \$13, Duluth \$11 and Minneapolis \$11.

The Montreal Trade Bulletin says: There is an easier feeling in the hay trade, and dealers who refused to sell No. 2 some time ago at \$8.50 f. o. b. at country points, expecting prices to go to \$12 per ton, have since been glad to accept \$7.75 and \$8 f. o. b. Owing to bad roads, however, in many sections of the interior deliveries have been impeded. A feature in the situation is the large quantities of Canadian hay going forward to the English markets, and a further drop in prices there is expected.

Domestic and Foreign Fruit.

Apples are in moderate supply, but light demand. Receipts were 3563 barrels last week, with exports of 534 barrels, same week last year receipts were 8320 barrels. Prices practically unchanged. Spy and No. 1 Maine Baldwin \$4 to \$5, No. 1 Greening \$3.75 to \$4.25. Common Baldwin and Greening \$3.25 to \$3.75. Gano \$4.25, Ben Davis \$3.50 to \$4.25. Talman Sweet \$2.50 to \$3.50, mixed varieties \$3 to \$4 and No. 2 all kinds \$2.50 to \$3.25. Cranberries in light supply and firm. Cape Cod fancy late \$7 to \$8, choice sound \$5.50 to \$6.50, common to good \$4 to \$5, crates \$2 to \$2.50 and Jersey boxes \$1.75 to \$1.85. Florida strawberries dull, a few choice at 40 cents a quart, but most sales at 25 to 35 cents. A few Catawba grapes from cold storage at 20 cents a basket.

Florida oranges in fair supply. Selected counts bright \$3.25 to \$3.50, good to choice bright \$3 to \$3.25, and Russet \$2.75 to \$3. Large fruit, 96 counts \$2 to \$2.50. Indian River bright \$3.75 to \$4. Tangerines scarce at \$6 to \$7. Grapefruit in demand, good to choice \$6.50 to \$8 a box. Jamaica oranges at \$5.50 a barrel \$2.75 a box, and grape fruit \$12 to \$15 a barrel, \$6.50 a box. California Navel 96 112 and 126 counts, choice \$2.75 to \$3, fancy \$3 to \$3.25, 176, 200 and 216 counts, fancy \$3.25, choice \$3 to \$3.25. Seedlings scarce and sell at same rates.

Valencias, ordinary \$4.50, extra large \$5 to \$5.50 a case. California grape fruit \$3.50 to \$3.75, and lemons, ordinary to fancy \$2.25, to \$2.50. Messina and Palermo lemons, 300 counts, good to choice \$2.75 to \$3, fancy \$3.25. Malaga grapes cleaning up at \$3.50 to \$6 a case. Florida pineapples, smooth Cayenne \$3.50 to \$4.50 a case, figs at 12 to 18 cents a pound, dates at 4 to 4 1/2 cents, bananas \$1.50 to \$2.50 a stem.

Vegetables in Boston Market.

The wet and cloudy weather has delayed the growth of hothouse products, and Southern shipments have been light, while some cause, perhaps the mud and bad roads more than anything else, has caused a scarcity of the usual supply of winter vegetables so that prices have taken a sharp advance on many things. Beets are from \$1.15 to \$1.25 a bushel, carrots 75 to 85 cents, and parsnips 85 cent to \$1, and even some fancy up to \$1.25. Flat turnips are dull 35 to 40 cents a box, yellow 75 to 90 cents a barrel, and white French \$1.25. Onions in only moderate supply and sound lots are firm at \$4 to \$4.25 a barrel, Havana \$2.50 to \$2.60 a crate and Spanish \$3.50 a case. Leek are 50 cents a dozen and shallots 15 cents a quart. Radish plenty 25 cents a dozen, and celery fair to good \$4 to \$5 a box. Salsify \$1 a dozen, artichokes \$1.50 a bushel and French artichokes \$3.50 a dozen. Cucumbers scarce at \$14 to \$18 per hundred for No. 1, No. 2 at about half price. Florida peppers \$2 to \$3 a carrier. Some egg plant coming very poor at \$4 to \$5 a case. Southern tomatoes in fair demand at \$3 to \$3.50 for six-basket carrier and hothouse 25 cents a pound. Hubbard squash firm at \$100 a ton, and Marrow when offered \$80 to \$85. Southern string beans rather poor, \$1 to \$2.50 a bushel crate. Asparagus scarce and small at \$3.50 to \$5 a dozen. Rhubarb 10 cents a pound and mushrooms 50 to 75 cents.

Cabbages are in only moderate supply at \$1.35 to \$1.50 a barrel, and red cabbage \$1 a box. California cauliflower varying from \$2.50 to \$3.25 a case as to size and quality. A few sprouts yet at 20 cents a quart. Norfolk spinach coming rather poor, \$1 to \$2.50 a barrel, and Baltimore \$1.50 to \$2.25. Lettuce 75 cents to \$1.25 a box of three dozen. Beet greens 55 cents, dandelions \$1.50 and parsley \$1.25 a box. Endive, fair to good, \$1.50 to \$2, fancy large \$2.50 to \$3 per dozen, escarol \$1.25 to \$1.50, and romaine \$1.75 to \$2. Florida string beans in fair supply, but many not choice, \$3 to \$4 a crate. California peas in but small supply at \$6 to \$8 for three-peck crates.

Receipts of potatoes have been moderate, and demand fairly good and steady. Aroostook Green Mountain extra 84 to 85 cents, fair to good 80 to 83 cents. Hebron, extra 80 to 83 cents, fair to good 78 to 80 cents. Rose 75 to 78 cents and Dakota Red 70 to 75 cents. Prince Edward Island Dakota Red 75 to 78 cents and Chenango 70 to 75 cents. Scotch, 168-pound sacks, \$2 to \$2.10, and Belgium \$1.75 to \$2. Sweet potatoes are in small supply. Jersey double-hulls irregular in quality from \$2.50 to \$4 a barrel, while small lots of Vineland cloth-heads sold at \$5 to \$5.50.

Bradstreet's reports exports of wheat for the week 3,234,540 bushels, against 3,009,435 last week; and 4,484,635 last year; since July 1, 1901, 106,433 bushels, against 151,122,735 last year. Corn for the week aggregated 312,664 bushels, against 255,380 last week and 3,282,948 last year; since July 1, 23,119,254 bushels, against 14,546,162 last year.

The total shipments of boots and shoes from Boston this week have been 76,088 cases, against 83,967 cases last week; corresponding period last year, 87,026. The total shipments thus far in 1902 have been 806,267 cases, against 764,680 cases in 1901.

The exports of dairy products from New York last week included 1256 packages of butter to Liverpool and 100 packages to London, most of both being renovated butter shipped from the West and 3517 boxes of cheese to Liverpool, 1573 to London, 4410 to Bristol, 1233 to Newcastle, 1000 to Leith and Dundee and 50 to Glasgow, a total of 1461 packages of butter and 11,865 boxes of cheese.

Exports from Boston for the week ending Feb. 28, were valued at \$1,221,749 and imports at \$1,376,380. Excess of imports \$154,631. Corresponding week last year exports were \$3,240,670, and imports were \$1,650,090. Excess of exports \$1,590,580. Since Jan. 1 exports have been \$16,028,175, and imports \$10,938,019. Excess of exports \$5,090,156. Corresponding period last year exports were \$25,214,889, and imports were \$10,73,899. Excess of exports \$14,475,990.

Exports of live stock and dressed beef from last week included 2497 cattle, 12,129 quarters of beef from Boston; 2338 cattle, 1255 sheep, 14,079 quarters of beef from New York; 719 cattle, 1620 sheep from Baltimore; 300 cattle, 480 quarters of beef from Philadelphia; 600 cattle, 1511 sheep from Portland; and 292 cattle from Newport News, a total of 6766 cattle, 4666 sheep, 26,888 quarters of beef from all ports. Of this 3255 cattle, 600 sheep, 7200 quarters of beef went to London; 3279 cattle, 403 sheep, 17,988 quarters of beef to Liverpool; 1200 quarters of beef to Southampton; 232 cattle to Glasgow; and 15 sheep to Bermuda.

Beef very dull. Very choice sides 9 1/2 cents, extra sides 9 to 9 1/2 cents, heavy 8 1/2 to 9 cents, good 8 to 8 1/2 cents, light grass and cows 7 to 8 cents, extra hinds 11 1/2 to 12 cents, good 9 1/2 to 11 cents, light 8 1/2 to 9 cents, extra fore 8 1/2 to 7 1/2 cents.

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cents, heavy 6 to 6 1/2 cents, good 5 1/2 to 6 1/2 cents, light 4 1/2 to 5 1/2 cents, backs 6 to 8 1/2 cents, rattles 4 1/2 to 5 1/2 cents, chucks 4 1/2 to 5 cents, short ribs 8 to 13 cents, rounds 6 to 9 cents, rumps 9 to 13 cents, hams and loins 10 to 15 cents, loins 13 to 15 cents.

Pork and lard are unchanged: Heavy backs \$20.50, medium \$19.75, long cut \$20.50, lean ends \$21, bean pork \$16.75 to \$17.50, fresh ribs 11 cents, smoked shoulders 9 1/2 cents, laid 10 1/2 cents, hams 11 1/2 to 12 1/2 cents, hams 12 to 13 1/2 cents, skinless hams 13 cents, sausage 10 cents, Frankfurt sausage 9 1/2 cents, boiled hams 17 to 17 1/2 cents, bacon 12 1/2 to 13 cents, bologna 9 cents, pressed hams 12 cents, raw leaf lard 11 cents, rendered leaf lard 11 cents, in pails 12 to 12 1/2 cents, pork tongues \$2.50, loose salt pork 10 1/2 cents, brisquets 11 cents, sausage meat 9 1/2 cents, Quaker scrapple 10 cents, country dressed hogs 7 cents.

The Massachusetts Fruit Growers Association meet at Horticultural Hall, Worcester, Mass., on March 12 and 13. Lectures on March 12 by Prof. F. A. Waugh of Burlington, Vt., and Hon. J. H. Hale of Gloucester, Ct.; on March 13 by H. E. Van Deman, Washington, D. C., and in afternoon by J. W. Clark, North Hadley, Prof. S. T. Maynard, Amherst, W. H. Elwood, Worcester, and Mrs. Alice E. Whitaker, Boston.

The visible supply of grain in the United States and Canada, March 1, was 54,083,000 bushels of wheat, 10,333,000 bushels of corn, 4,246,000 bushels of oats, 2,185,000 bushels of rye and 2,088,000 bushels of barley. Compared with a week previous, this shows a decrease of 22,000 bushels of wheat, 456,000 bushels of corn, 65,000 bushels of rye and 78,000 bushels of barley, with an increase of 182,000 bushels of oats. One year ago the supply was 57,234,000 bushels of wheat, 17,740,000 bushels of corn, 10,550,000 bushels of oats, 1,163,000 bushels of rye and 1,300,000 bushels of barley.

The world's exports of grain last week were reported as 6,075,500 bushels of wheat from six countries, and 3,992,664 bushels of corn from three countries. Of this there were 3,333,540 bushels of wheat and 312,664 bushels of corn from the United States.

Egg receipts have been light, and dealers take only enough for a day's trade. Near-by and cape fancy sell readily at 32 cents. Eastern and Northern choice fresh, and Western fancy and selected at 31 to 32 cents, with fair to good lots 29 to 30 cents, nearly all arriving in good condition. An increased supply is expected soon. Receipts for February were only 29,296 cases. In February last year 59,431 cases were received.

Muttons and lambs are in dull request, with prices rather easy: Lambs 4 1/2 to 10 cents, fancy and Brightons 9 to 10 cents, yearlings 6 to 9 cents, muttons 7 to 9 cents, fancy 7 1/2 to 9 cents, veals 9 to 10 1/2 cents, fancy and Brightons 10 1/2 to 11 cents.

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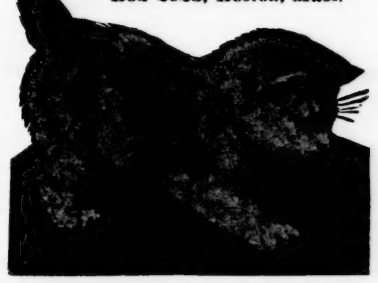
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MASSACHUSETTS PLOUGHMAN

There are also some Spanish Americans in Boston.

And, after all, it is pleasant to be able to think in English.

The footsteps of the Horse Show may be heard in the distance.

How much longer can we get along without what we have given up?

The Pope is an old man to have two birthday celebrations at the same time.

Judging by the first house that came to Boston by freight, we fear the second.

It is now time for some one to remark that Mr. Bryan always did like an uphill job.

Its upholders to the contrary, the death penalty will sooner or later abolish itself.

A great many questions of precedence have been settled during the last week or two.

Promotion is an excellent thing, but it is better for the young to be promoted than to try to promote.

Chelsea has also had her chief of police removed. The city is sometimes said to be slow, but it usually follows the fashion.

Who shall say that Gotham is heartless. A place has been discovered where even able-bodied beggars are supplied with crutches.

One of the saddest stories of the week is that of the student driven insane by overwork in an effort to pay his way to an education.

Miss Alice Roosevelt is going to Cuba. When she comes back perhaps she will be able to turn the eyes of Congress in the same direction.

We may not agree with Dr. Savage in the matter of departed spirits, but he will find much sympathy in his attacks upon ostentatious jewelry.

March came in like a lamb; but perhaps the floods roared sufficiently to even things up, and permit the month to go out without undue rampings.

In the case of the murder just now most prominently before the public, there seem to be a good many persons who think that the victim got just about what he deserved.

It is certainly unkind to say that portraits of State auditors are not of historical value; the statement, at least, does not apply to their accounts.

"Ah, the romantic mystification of these honeymooners." Ah, indeed, when the great public gets to discussing the movements of the honeymooners!

\$242,753.46 is the sum eaten up by the fire demon during January. Here is another fellow that modern civilization finds it difficult to reduce to idleness.

Fortunately for the prince, the custom of writing poetic remembrances in autograph albums and then presenting the result is no longer an American custom.

Some of the churches of Boston are being looted in time of peace. Religion is usually more sacred except when it belongs distinctly to somebody who has just been whipped.

Either the clergy is not afraid of sea-sickness, or the navy is considered a fine field for clerical labor, if we may judge from the four hundred applications for a single vacancy.

Groton has resumed, and the boys will soon sympathize with the inevitable fact that you can't have your cake and eat it, too. The Easter recess has been taken between meals.

"Eternal vigilance," remarked the city marshal of Springfield, as he thoughtfully removed his eyes from a local nickel-in-the-slot picture machine, "is sometimes its own reward."

The stage occasionally presents interesting contrasts. Here, for example, is John Storm bothered in his private capacity by the efforts of his divorced wife to receive alimony.

A man of seventy, down in Connecticut, has married his twenty-six-year-old housekeeper. Thus things even themselves up if we cast our eyes over a broad enough field of observation.

The suffragists have made a step forward without knowing it. Woman is rivaling man as an expert dog fancier, and here is proof positive of an advance in decision.

There is a rumor in New York that the sports are going to buy a vessel for the purpose of holding prize fights beyond the reach of the authorities. It thus appears that a reform administration may even compel a sport to take to water.

That new thoroughfare presents an interesting puzzle. Everybody admits the need of it, but when or where can the city spare enough of the district in question to make a wiler street for the benefit of the rest of it?

Boston's Arena has one bear less, and it is said that Harvard is to have one pelt more for its museum. Meantime the tigress is meditating over a few moments of really interesting experience.

The German veterans were easily the favored group at the Public Library reception. Each of them, in fact, had a little reception all by himself. "I'm glad they're here," said Mayor Collins.

The opinion of a majority of governors that the time of inaugurating the President might very well be changed may very well be taken as expert opinion. They all of them know what it is like to be inaugurated.

Somebody really ought to stop the barber who advertised as follows in the leading daily: "Gentlemen! everybody but you comes to my shop! But perhaps that is what he meant."

Mayor Carter Harrison is endeavoring to reduce his own salary, and will probably succeed in doing so. Here is an example

for the mayor of other cities that need money. Chicago is not the only one.

Blackmail is a hard habit to break off in Gotham, even when the protectors of the peace are under an honest administration. The fact was inevitable in view of the ease with which the uniformed blackmailers are able to pocket his money. The authorities, however, ought to be able to make the operation gradually a very expensive risk for operators.

Our Royal Guest.

Boston had on its best winter clothes for the visit of the prince on Thursday, and all the events of the day went off beautifully as planned. The people in the streets were sufficiently but not too interested, the hosts of the occasion were courteous without being fulsome. For once our public officials of all political colors and creeds ate together in admirable amity, and the prince left behind him here, as in every other American city that he has visited, an excellent impression as a cultivated and charming German gentleman.

Americans are naturally hospitable, and to welcome a worthy representative of the land which has given us a reformer like Luther, a poet like Goethe, philosophers like Kant and Hegel, and men of science of the Humboldt type, not to mention musicians like Beethoven and Wagner, was deemed a great privilege. Germany, we feel, is one of the great Powers of the modern world, and is to be ranked in the very forefront of the intellectual movement now going on for the higher emancipation of the race.

But that there is more to the visit than the desire of America and Germany to exchange felicitations on their respective attainments, no thoughtful person for a moment doubts. The visit of the German prince is to be regarded as a historic landmark, and as such cannot be ignored by those who would travel intelligently the path of international politics.

The United States has recently made itself felt in the East; we have grown from a republic into a republican empire, and William II. is far too clever a man not to have weighed the possible import of this growth, and far too keen a strategist not to have set himself at once to thinking out a move which should promote greater friendliness between his country and our own. The visit for which Boston last Thursday twined the American and the German flags was prepared with the utmost care, on at least one side of the Atlantic.

The history of Germany abounds in recent years in similar instances of German diplomacy, and the secret archives alone could tell how often great wars have been averted by just such royal moves as this one. For what is true of Germany is true of England and of Russia also. It is the business of the royal families of Europe to promote peace whenever they can, and it is the business of the United States to play up to them in all such matters, so far as this can be done with dignity and self-respect.

So, as a representative city in a peace-loving nation, we should be as glad to have had Prince Henry within our borders as he seemed glad to be here. It was our great privilege to regard him on this occasion as our honored guest. If there should ever be war between the United States and Germany, we should find that the Henry to whom we once extended the hospitality of our city is an admirer of such skill as even a Dewey might fear to meet, and that his brother is as good a soldier as he is a sailor. If the present visit, therefore, is the inauguration of a period of peace founded upon compulsory arbitration, the year 1902 should be a great year in history.

Breeding for the Future.

The expense of starting a good dairy must necessarily be quite considerable, but if one understands his business well, he can keep up the standard of the herd, and increase it, at a very nominal cost. On the other hand, if one does not look forward constantly to the future he will soon find that the cost of keeping up the work will be so great as to eat up the profits. The successful dairyman must consequently be somewhat of a breeder himself. He must raise stock for the future, and do it in such a way that the best results are obtained. A great many can start well with a good dairy herd, and they can feed and care for the stock all right; but they fail to look far enough ahead to keep down expenses. In other words, every few years they find it necessary to buy blooded stock of a breeder at a cost that takes down the average of profits. Their theory is that it is necessary to purchase such high-priced animals to prevent the herd from running down.

A good sensible method of breeding at home for the dairy would prevent any such necessity. With good stock to begin with, it is not so difficult to maintain the standard of the animals, especially if new blood is introduced from outside sources occasionally. To accomplish this, however, it will be necessary to keep the choice heifers of the best cows, and sire them to pure-bred bulls. It is largely a matter of intelligent selection. The cows and heifers selected for breeding should be chosen for those special points which are needed in the dairy business. It must be remembered that these animals are raised for their practical value and not for exhibition, nor even to establish some record for a high yield. The dairyman requires good, strong, healthy cows, which will average the year around plenty of rich milk and cream. Form has nothing to do with the matter beyond that which is necessary to preserve the type of the breed. The main qualities are the first essential, and also the endurance of the animal under ordinary conditions. The very high-strung dairy animal which has no hardihood whatever may do for exhibit, but not for practical dairying. Moreover, we need dairy animals which are gentle and docile. A high-strung animal which refuses to be milked without creating a disturbance, or a vicious brute, should have no place on the practical dairy farm, and no place on the practical dairy farm.

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ones. The two-year-old trees seem to be about the ideal ones for starting a young orchard, and they will grow thrifter and adapt themselves to the soil better than trees of almost any other age.

An orchard should not be so large that one cannot give personal attention to individual trees. To get the most out of them it is necessary to be acquainted with every one individually. The orchard that pays the best is built up by attention to each tree to bring out its individuality. One may go through the orchard and find trees not producing well, and a little top-grafting of scions taken from very productive trees will in a few years convert an unprofitable tree into one that pays well. No orchard can do its best without this individual management. The trees that show remarkable ability to produce must be handled so that grafts from them can be distributed over many other unproductive trees. Top-grafting of this kind is the most successful work that can be done in the orchard. The influence of good bearers is thus spread over the whole farm, and each tree is stamped with the individuality of the owner.

Trees with a good much in the spring do better than those left untreated, for the moisture is conserved around their roots, and they are apt to grow rapidly. Corn or grass raised in the orchard helps to further the growth of the trees in two ways. They regulate the moisture in the summer, and later they add humus to the soil when plowed under. Of course, the leguminous crops are the best, for they add nitrogen which the soil so much needs. In fact, a crop of clover raised in the orchard and plowed under will often do more for the soil than the clover has heavily manured with fertilizers from the barnyard or elsewhere. The clover not only adds nitrogen to the soil, but it takes up the potash and phosphoric acid in the land and makes it immediately available for plant use.

Remedies for Canker Worm.

During the last two or three years an increasing injury has been done to many orchards in New Hampshire by the canker worm. This injury is so serious, and might be prevented with such comparative ease, that this bulletin is issued to give the orchardists of the State the latest information concerning methods of combating the pest.

The remedial measures to be used against any insect can best be understood when one knows some detail of its life history, of the insect. This is particularly true of the canker worm, because one of the practical methods of fighting it is dependent upon a peculiar fact in its life history.

In briefest summary the story of a canker worm's life is this: In early spring, about the time the leaves begin to push out from the buds, it hatches from an egg previously laid upon the bark of a twig or branch by a small, wingless moth. The little canker worm immediately begins to feed upon the green and succulent tissues of the young leaves, a process which it continues from day to day for about a week. It is then too large for the skin with which it was born, and so it moults or sheds its skin, crawling out of the old one, clothed in a new one that had formed beneath the other. It soon begins feeding again, eating more and more of the green tissues of the leaf as it grows larger. About a week later this moulting process is again repeated, after which the caterpillars continue feeding as before. In the course of five or six weeks of such growth the canker worms become full grown, and so far as this caterpillar state is concerned, when thus full grown the canker worms are green or brown, varying much in color more or less striped with longitudinal lines. On the under side of the body are ten legs, six just back of the head and four near the hind end. In moving about, the middle of the body is humped up, and in consequence these insects are commonly called looping caterpillars or measuring worms. When the branch upon which the insects are feeding or resting is jarred, the canker worms drop toward the ground, each spinning from its mouth a silken thread, up which it can crawl again when danger passes.

Late in spring or early summer the full-grown canker worms descend to the ground, where, at or slightly beneath the soil surface, they make slight silken cocoons. Within these they change to chrysalids or pupae, remaining in this condition until the autumn or spring following. Then they emerge as small, grayish moths. There is a remarkable difference in the appearance of the sexes of these moths. The males have small bodies and broad, well-developed wings; the females have larger bodies but no wings. While the former can fly freely, the latter can only crawl up the neighboring trees to deposit their eggs; they die soon afterwards. The eggs hatch when the leaves begin to expand in spring and the young worms begin their ruinous work.

Those who have studied the canker worms must carefully have found that there are two common species—the fall canker worm (*Anisophteryx pomonaria*) and the spring canker worm (*Papaera vernalis*). The moths of the former species appear and lay their eggs mostly in autumn, while those of the latter appear in the spring. Both species are found in New Hampshire, the spring species being apparently the more destructive at the present time.

The two practical remedial measures which may be used against the canker worm are the banding of the trees to prevent the ascent of the moths, and the spraying of the leaves with poisons to kill the worms. The success of the first is due to the fact that the egg-laying female moth is wingless and that she becomes fully developed on or beneath the surface of the ground; consequently to lay her eggs upon the twigs she must ascend the trunk of the tree.

Various substances have been used in the past for this banding of the trees, printer's ink being, perhaps, the most popular of these. The best thing now available, however, is the substance called Bodlime, made by the Bowker Chemical Company of Boston, Mass. This is a thick, pasty material which may be put directly upon the bark of the trees in a wide band, which will remain fresh and in position for months. The manufacturers say that "the band should be from two to two and one-half inches wide, and from one-half to three-fourths of an inch thick at the lower edge. Bevel off the upper side of the band to the bark to shed rain water, and bring the lower side to a sharp edge. The banding is best done on a moderately cold day, using a common, smooth blade trowel for spreading and shaping the band. Working the mixture over with a trowel softens it." The manufacturers also give the following:

CAUTION.
"Do not apply Bodlime to young, thin-barked trees. In this case it is best to spray. Remove all bands as soon as the

danger from the canker worm is over. This is important. Keep packages closed when not in use, to avoid evaporation."

Last spring I had an opportunity to observe a practical test of this substance in the orchard of Albert Demerit of Durham. The results seemed to me to be very satisfactory and Mr. Demerit has kindly written for this bulletin the following account of his experience with the remedy:

"In reply to your query regarding my use of 'Bodlime' on my trees in the spring of 1901, I would say that my trees are very large trees, and as I have to hire all my work done I had the 'Bodlime' applied by a man who was an expert in the use of the trowel. I ordered material sufficient for two hundred trees, and they sent me two hundred pounds, which cost \$15, on cars in Boston. The freight charges and the labor charges brought the cost per tree up to about ten cents per tree. We removed the 'Bodlime' about July 1, as you recommended. It seemed to be very effective, so much so that we shall not apply it to our orchard next year. The application was made April 1 and 2. This was just a little too late, in my opinion, as some of the moths had gone up before the application the evening before. However, I think it was effective enough so that I shall not make the application the ensuing year. If the canker worms show any in the orchard in the year of 1902, I shall make two applications of 'Bodlime'—one about Nov. 1, 1902, and the next March 15, 1903. I shall put a little higher than the bands where the 'Bodlime' was applied the previous November. I was obliged to make daily examinations of the bands of 'Bodlime' to take off the moths that were caught each night, to prevent their bridging the bands with their dead bodies."

This banding method is particularly serviceable in the case of orchards which are likely to be badly infested, because it prevents the injury that is bound to occur before the canker worms in such an orchard can be killed by spraying. It also is especially useful in protecting large elm trees, which are difficult to spray on account of their height.

If thoroughly applied, the bands being kept on throughout the entire season, during which the moths and caterpillars of both species appear—from October till June—this banding method is easily applicable to orchard practice. In cases where the attack the previous season was severe, it will generally pay to apply bands, even if the orchardist expects to spray his trees, for, as intimated above, it has been the general experience that an orchard badly infested by canker worms cannot be wholly freed from the pests the first season, before considerable damage is done to the foliage. Some New Hampshire farmers have told me they preferred to fight the canker worm by the banding rather than the spraying method, because their work-people kept them so busy during the spraying season. But, in general, the orchardist will find it profitable to spray, because he can thus kill off not only the canker worms and other leaf-eating insects, but the codling moth as well, and if he so desires, he can in the same mixture fight the apple scab and other fungous diseases.

The spraying method of fighting the canker worms aims to cover the leaves with fine particles of poison, so that the young worms will eat it and be killed. When an orchard is infested by canker worms it is very desirable to spray once before the blossoms open. The insects begin hatching early in the season; if trees are not sprayed until after the blossoms fall, considerable damage will be done before the worms are killed. One spraying when the buds are in a well-developed condition will be of much service. Another should be given as soon as the blossoms fall; and if the canker worms are very numerous, a third—a week or ten days after the second—will be desirable.

The spraying may be done either with paris green, Scheele's green, or arsenate of lead. Paris green may be applied in a water spray at the rate of one pound to two hundred gallons of water, with a pound or two of fresh slacked lime added to each barrel of the mixture to render all the arsenic insoluble, and thus prevent injury to the foliage.

If arsenate of lead is used it should be bought in the form of a paste, and may be used at the rate of three pounds to fifty gallons of water. This poison has these advantages over paris green: (1) There is no danger of burning the leaves, so that it can be put on in stronger mixture. (2) It remains in suspension in the water better. (3) It adheres to the foliage more evenly and longer. (4) It may be seen upon the leaves more readily, so that the thoroughness of the spraying may more easily be determined.

Scheele's green is another arsenical insecticide recently placed on the market. According to a bulletin of the United States Department of Agriculture, it "is similar to paris green in color and differs from it only in lacking acetic acid; in other words, it is a simple arsenite of copper. It is a much more powerful than Paris green, and, therefore, more easily kept in suspension, and has the additional advantage of costing only about half as much per pound. When properly washed and prepared by the manufacturers, it is less harmful to the foliage even than paris green, is quicker in effect, and should supplant the latter as an insecticide. It is used in the same way and about the same strength as paris green."

There are many sorts of good spraying pumps now upon the market; they may be purchased through any hardware dealer or seedman. The spray should be applied through a nozzle that throws a fine mist, and should be evenly distributed over the tree, stopping just before the leaves begin to drip.—Clarence M. Weed, of the New Hampshire Experiment Station.

Good Crops the Test of Fertilizers.

The report which we publish on the eighth page of this week's issue, of 847 bushels of potatoes on one acre in Colorado and 745 bushels on an acre in Maine are certainly record figures, as are some of the other crops there reported, but they were all well authenticated, both land and products carefully measured, and the harvesting necessarily by responsible parties who make sworn affidavits to the facts.

However, there are thousands of farmers and gardeners who have tested the Mapes Manures for themselves, not one year alone, but have used them for many years, and if they have not succeeded in growing as enormous crops as are there reported, they are satisfied that the results well repaid the cost of the fertilizer, and made them annual

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customers of these high-grade manures. They are also satisfied that these manures are skillfully as well as honestly compounded, uniform in quality, and well adapted to promote the growth of the various crops for which they are made. They are also lasting in their effects, adding to the permanent fertility of the soil.

The days when it was thought that a farmer must keep stock almost for the manure it would make, and draw out loads of it from the city, have passed by for many farmers, and will for many more if they will send for the pamphlet sent free by the Mapes Company, and then test the manures for themselves.

Fertilizing Lawns.

It may seem early to talk about fertilizing lawns, but careful experiments have proved that the very best time to apply lawn fertilizers is in March, or just as soon as the frost is out of the ground, so that every particle of the fertilizer will work its way down to the grass roots.

If fertilizer is applied as suggested, it stimulates a strong root growth early in the season, which produces, a little later, a firm sod covered with beautiful, fine, dark-green grass.

We would, therefore, advise every one to apply their fertilizers early in the spring, and if they use Bradley's unexcelled special fertilizers for grass, lawns, tennis courts, polo grounds, etc., they will be sure to have, a few weeks hence, a lawn that will be a delight every day, and retain its beautiful appearance all through the dry summer months.

Farmers' Institute at Amherst.

The Massachusetts Society for Promoting Agriculture will unite with the college in a Union Institute to be held in Stone Chapel, Amherst, on March 20. The college will furnish lunch and hot coffee free. In connection with the institute a large line of dairy machinery will be shown in operation by students in the short winter course in dairying. Farmers are invited to bring samples of milk and cream to be tested. Butter made by students of the dairy school will be shown in competition for the liberal prizes offered by the Massachusetts Society for the Promotion of Agriculture. The speakers are to be Prof. C. H. Beach of the Storrs Agricultural College on "The Selection of the Dairy Cow," Prof. C. H. Lane of the New Jersey Experiment Station on "The Production of Milk for the Private Trade," and Major H. E. Alvord, chief of the Dairy Bureau, United States Department of Agriculture, on "Some Dairy Problems." The operation of dairy machinery will begin at 9:30 A. M., speaking at 11 A. M. A large attendance is desired and expected. Electric cars from railway stations pass through the college grounds.

The owners of automobiles are pointing out the fact that the parks are intended for pleasure vehicles, and asking for greater privileges for their own kind of pleasure vehicle. The main objection apparently lies in the fact that there are a large number of other persons who hold that the parks were intended for pleasure first and pleasure vehicles afterward.

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Wouth's Department.

were by, and still no sound from the room. At length the door softly opened, and the kind old family physician came out.

"Wry, Tom, what are you doing here?"

"Is he in—he dead?" sobbed Tom.

"No, my boy; he is very much alive, and in a few weeks he will be as well as you are. Was it you who took him?"

"Yes, doctor," said Tom, manfully; "I despise myself for it; he didn't want to go, and I taunted him into it. I am much older than he is, too. Don't you think I always hate me?"

"I think, on the contrary that you and Dick will be better friends than ever. You have learned that the way of the transgressor is not an enviable one," remarked the old doctor, sagely.

And the doctor's prediction came true, for in the by-and-by, university and manhood days Dick Wither and Tom were inseparable.—New York Tribune.

Writing of the recent observations made by him and others on that part of the solar spectrum which lies between the red end of the very prismatic, or visible, spectrum, and consists about four-fifths of the radiant energy of the sun, Prof. S. P. Langley says that we are beginning to see that the seasons, "which write themselves upon the records of the spectrum," may, in the future, have their effects upon the climate recorded by means somewhat similar to the method made daily by day by the Weather Bureau, but in a way infinitely more far-reaching, and that these predictions will be made with the direct study of the sun. There are strong indications in the direction of a future power of prediction as to coming years of plenty and of famine.

"Philosophy," he continued tranquilly, "is superior to love; it is independent of, the domestic emotions; it—"

"Then you are not married?" she interrupted loftily.

"Married!" exclaimed the Philosopher aghast. "Should I be a philosopher if I were? Marriage is quite destructive of philosophy."

ings found that the air of the Pretoria valley becomes very hot and dry, and the severe storms generated include whirlwinds carrying dust, paper, leaves, etc. From a gelatine plate exposed one second to a dust storm thousands of colonies of bacteria were developed. It is believed that fevers are spread in this way, and the possible distribution of tropical epidemics is appalling.

Tenderly the father lifted his unconscious and carried him home. No one suffered as much as Tom during the doctor's consultation, huddled up in a little heap outside Dick's door. He

sugar beets eighteen parts, clover hay nineteen parts, beans thirteen parts and the cereals five parts. To this we will add that the cereal grains of a well-grown crop usually show about four times as much of potash in the straw as in the grain, thus as the straw is the heavier, requiring twenty-five to thirty parts of potash for each one thousand parts of grain.

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